

# LIQUID FUEL NOZZLE APPARATUS WITH PASSIVE WATER INJECTION PURGE

## Abstract

In a gas turbine having a compressor, a combustor and a turbine, a gaseous fuel supply coupled to provide gaseous fuel to the combustor, a liquid fuel supply coupled to provide liquid fuel to the combustor via nozzle assembly. The nozzle assembly includes a plurality of passageways for flowing a fluid into the combustor, one of the passageways being an atomizing air passageway conduit interconnecting the atomizing air passageway to one of the plurality of passageways to enable fluid flow therebetween, while not allowing the flow of fluid back into the atomizing air passageway. High pressure air from the atomizing air passageway is diverted into one of the plurality of passageways via the conduit to protect the nozzle from ingestion of hot combustor gases, thus eliminating a need for a dedicated air purge system for that one of the plurality of passageways.